

## GROUND WATER QUALITY PROTECTION

tration program. The state's Draft Upstate Ground Water Management Program report, released by DEC in early 1985, provides a comprehensive framework of recommendations for the management of these programs to achieve enhanced ground water protection.

Under the Public Health Law and Part 5 of the State Sanitary Code, DOH ensures that public water supply systems are operated properly and maintained to ensure a safe and adequate supply. The program involves regulation, periodic monitoring of water quality, inspection of systems, emergency response to problems of supply and quantity, laboratory services, and establishment of drinking water standards.

By agreement with the state, many county health agencies assist with state pollution control and water supply regulation programs. Some counties also administer additional programs of their own. This involvement of county government is a crucial element of effective programs to protect ground water. Towns, cities, and villages are responsible for regulating land use, a key factor determining the pollution hazard to ground waters.

## LONG ISLAND, NEW YORK

## Overview of Ground Water Resources

The largest and most important water resource in New York State is the vast aquifer system that underlies all of Long Island and includes Nassau and Suffolk counties as well as the boroughs of Brooklyn and Queens in New York City. It is the only source of fresh water available to more than 3 million residents.

Long Island is the only portion of New York lying within the Coastal Plain physiographic province. It is underlain by unconsolidated stratified glacial drift sand and gravel deposits atop a much thicker marine sands deposit, all of very high permeability. About half of the relatively high average rainfall rate of 44 inches per year percolates to the water table, providing an unusually high recharge rate to the system (under natural conditions).

The principal aquifers of Long Island (see Figure 3.1) are the upper glacial aquifers of Pleistocene Age and the deeper Magothy and Lloyd aquifers composed of older marine sands. The upper glacial aquifer in most areas is generally in direct contact with the underlying Magothy aquifer, but the deeper Lloyd sand aquifer is, with a few exceptions, separated from the overlying Magothy by a thick confining layer of silt and clay. The top two aquifers are pumped extensively for public and private supplies, but by far the most important of the three formations is the Magothy. Over 90 percent of all Nassau County withdrawals rely on this aquifer. Pumpage has in-